

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1-19. (Canceled)

20. (Previously presented) A method of optimizing angular orientation of rolling contact surfaces in a bearing of a type having an inner ring and an outer ring on which the rolling contact surfaces are respectively provided and tapered rollers received therebetween, the bearing being received to a shaft and held thereto by carrying out of a caulking operation in which an end of the shaft is deformed outwardly so as to be caulked to an outer end surface of the inner ring, the method comprising:

determining an angle of the rolling contact surface of the outer ring at which extended lines of the respective rolling contact surfaces of the inner and outer rings intersect at a common point at a rotational axis of the shaft prior to the caulking operation;

obtaining an adjusted angle for the rolling contact surface of the outer ring by adding a fluctuation angle of the rolling contact surface of said inner ring due to the caulking operation to the angle of the rolling contact surface of the outer ring; and

orienting the rolling contact surface of the outer ring at the adjusted angle relative to the rotational axis prior to performing the caulking operation.

21. (Previously presented) A method according to claim 20, further comprising experimentally determining the fluctuation angle according to a caulking load.

22. (Previously presented) A method according to claim 20, wherein the caulking operation is applied to a double row tapered roller bearing in which the outer ring is a single outer ring having two row rolling contact surfaces adjacent in an axial direction, the tapered rollers being arranged on said two row rolling contact surfaces, and in which the inner ring has a single rolling contact surface paired with a rolling contact surface on a vehicle inner side of the outer ring, the roller bearing being attached to an outer periphery of a hub wheel to which a wheel is attached, a required area of the outer peripheral surface of said hub wheel being utilized as a rolling contact surface paired with the rolling contact surface on the vehicle outer side of said outer ring.

23. (Currently amended) A method according to claim 22, ~~wherein~~ further comprising attaching an equal velocity joint ~~is attached~~ to a center hole of

said hub wheel so as to be rotatable integrally with said hub wheel and located proximate to said tapered roller bearing.

24. (Previously presented) A method according to claim 20, wherein the caulking operation is applied to a tapered roller bearing in which the outer ring is a single outer ring having two row rolling contact surfaces adjacent in an axial direction, the inner ring including a first inner ring on a vehicle inner side corresponding to the rolling contact surface of said outer ring on the vehicle inner side, and a second inner ring on a vehicle outer side corresponding to the rolling contact surface of said outer ring on the vehicle outer side, the tapered rollers being arranged between the rolling contact surfaces of said outer ring and the first and second inner rings.

25. (New) A method of optimizing angular orientation of rolling contact surfaces in a bearing of a type having an inner ring and an outer ring on which the rolling contact surfaces are respectively provided and tapered rollers received therebetween, the bearing being received to a shaft and held thereto by carrying out of a caulking operation in which an end of the shaft is deformed outwardly so as to be caulked to an outer end surface of the inner ring, the method comprising:

obtaining a fluctuation angle of the rolling contact surface of said inner ring as a difference between an angle of the rolling contact surface of the inner ring prior

to the caulking and a modified angle of the rolling contact surface of the inner ring due to the caulking operation to the angle of the rolling contact surface of the outer ring;

determining a preliminary angle of the rolling contact surface of the outer ring at which respective extended lines of the rolling contact surfaces of the inner and outer rings prior to the caulking operation intersect at a common axial position along a rotational axis of the shaft, said respective extended lines having an included angle therebetween for appropriately accommodating the tapered rollers;

adding a fluctuation angle of the rolling contact surface of said inner ring due to the caulking operation to the preliminary angle of the rolling contact surface of the outer ring to obtain an adjusted angle; and

orienting the rolling contact surface of the outer ring at the adjusted angle relative to the rotational axis prior to performing the caulking operation whereby, when the angle of the rolling contact surface of the inner ring prior to the caulking is changed to the modified angle due to the caulking operation, the fluctuation angle is compensated for in the adjusted angle of the contact surface of said outer ring by being set prior to the caulking operation.

26. (New) A method according to claim 25, wherein said bearing is a tapered roller bearing in which the outer ring is a single outer ring having two row rolling contact surfaces adjacent in an axial direction, the inner ring including a first

inner ring on a vehicle inner side corresponding to the rolling contact surface of said outer ring on the vehicle inner side, and a second inner ring on a vehicle outer side corresponding to the rolling contact surface of said outer ring on the vehicle outer side, the tapered rollers being arranged between the rolling contact surfaces of said outer ring and the first and second inner rings.

27. (New) A method according to claim 26, wherein said first and second inner rings are at a same angle with respect to the rotational axis prior to the caulking operation, and respective angles of said two row rolling contact surfaces of the single outer ring are different from one another.

28. (New) A method according to claim 26, wherein said first and second inner rings are of a substantially same configuration prior to the caulking operation.

29. (New) A method of optimizing angular orientation of rolling contact surfaces in a bearing of a type having an inner ring and an outer ring on which the rolling contact surfaces are respectively provided and tapered rollers received therebetween, the bearing being received to a shaft and held thereto by carrying out of a caulking operation in which an end of the shaft is deformed outwardly so as to be caulked to an outer end surface of the inner ring, the method comprising:

adjusting an angle of the rolling contact surface of said outer ring, prior to the caulking operation, based upon a predicted change in angular orientation of the roller contact surface of said inner ring due to the caulking operation, such that a desired form is maintained after said caulking operation; and

carrying out said caulking operation.

30. (New) A method according to claim 29, wherein, in accordance with said desired form, the respective rolling contact surfaces of the inner and outer rings intersect at a common point at a rotational axis of the shaft after said step of carrying out said caulking operation.